

REMARKS

Claims 1-13 are pending in the application. Claims 1-13 are rejected. All rejections are respectfully traversed.

The invention orders multimedia content. Image or video multimedia content is segmented to extract objects. Features of the objects are then extracted and associated to produce content entities. The content entities are coded to produce directed acyclic graphs of the content entities, each directed acyclic graph representing a particular interpretation of the multimedia content. Attributes of each content entity are measured and the measured attributes are assigned to each corresponding content entity in the directed acyclic graphs to rank order the multimedia content.

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller, et al., (*News On-Demand for Multimedia Networks* – “Miller”), in view of Lee, et al., (*Querying Multimedia Presentations Based on Content*, “Lee”).

The invention segments multimedia content to extract objects. Miller describes a store and forward file transfer system, see Section 4. “The basic information unit of the system is the file. A file can contain data like ASCII characters, bitmap or structured graphics, a stock market quote or the results of a data base search. Files can also contain time-based information such as digitized streams of audio or video, or a series of frames stored as animation.” see Section 4.1.

In section 5.2, Miller describes organizing multiple files as compound stories. Miller never segments the data in the files. Miller is non-analogous art and irrelevant to the invention. Miller is devoid of any teaching of segmenting multimedia content as claimed.

Miller generates models that he names media objects. Miller's media object is a model including an object control structure (OCS) and an optional media data set, i.e., a file. The media objects are combined in binders to create a story. Miller's media objects are not the result of segmenting his files. Nowhere in section 5.2. does Miller segment his files. Applicants respectfully request the Examiner to indicate which words in section 5.2 seem to indicate a segmentation.

His model supports 'composition' and 'sharing', see second paragraph, neither is segmenting or extracting features. Objects can be "stored, retrieved, replaced, or deleted," none of these are segmenting or extracting.

Miller does not extract features from his files to produce content entities, measures or assigns attributes, or rank orders anything at all. One of ordinary skill in the art would never confuse the model described in Miller with an object extracted from multimedia content as claimed. The Applicants request the Examiner specifically point out which words in section 5.2 of Miller describe segmenting multimedia content in his files or extracting objects. The only operations Miller describes in section 5.2 are storing, retrieving, replacing or deleting. Those operations are performed on Miller's media object models, see section 5.1, not the multimedia content as claimed.

Miller never operates directly on multimedia content as in the invention. Miller operates on his model. Therefore, Miller can never extract and associate features from objects extracted during a segmentation step as in the invention. The Applicants request the Examiner specifically point to the words in Miller that mean segmented object, extracted feature, or content entity as claimed.

Miller represents his media object model as a directed acyclic graph (DAG). The invention codes features of objects segmented from content, i.e., content entity, as DAGs. These are completely unrelated operations.

Furthermore, the Examiner admits that Miller neither measures attributes of content entities nor assigns the measured attributes to each corresponding content entity in the directed acyclic graphs to rank order the multimedia content as claimed. This is true because there are no content entities in Miller. It would appear that Miller does not describe a single element of the invention.

Lee fails to cure the defects of Miller. Lee starts where the invention ends. Lee allows a user to query multimedia presentations based on content. Queries are compared to attributes of a representative frame of the multimedia content. Claimed is measuring attributes of each content entity, and assigning the measured attributes to each corresponding content entity in the directed acyclic graphs to rank order the multimedia content.

Lee never generates content entities from features of extracted objects as claimed. Lee simply queries the results. The Applicants request the Examiner specifically point to where Lee segments objects, or extracts features and associates them to produce content entities as claimed.

Lee never measures attributes. Lee compares queries to attributes. The Applicants cannot find one word in Lee that teaches measuring attributes as claimed. Further, nothing in Lee is rank ordered as claimed. The Applicants have thoroughly reviewed Lee, including the section cited by the Examiner, but find no teaching whatsoever of the claimed measuring or assigning attributes to content entities to rank order the multimedia content as claimed. Lee never rank orders anything. The results of Lee's queries are displayed, never rank ordered.

Figure 2 of Lee does not include the words intensity or order, increasing or decreasing, anywhere. Applicants respectfully request the Examiner explain how Fig. 2 even suggests intensity attributes or rank ordered attributes. Applicants cannot find any words that suggest intensity or rank ordered attributes.

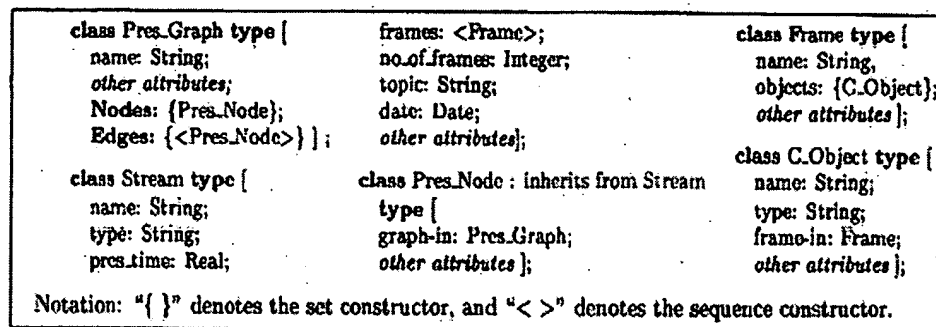


Fig. 2. Data modeling of a presentation graph.

The two special attributes described by Lee are *Nodes* and *Edges*. This has nothing to do with object direction and there is no suggestion to measure or assign the attributes.

The same is true for temporal and spatial attributes. Lee compares queries to attributes. The Examiner is requested to specifically point to where Lee measures temporal or spatial attributes, assigns them, or rank orders them.

The invention traverses the multimedia content and summarizes the multimedia content according to the directed acyclic graph and the measured attributes assigned to the content entities. As stated above, Lee never measures or assigns attributes. Lee uses temporal operators, such as "*Next, Connected, Until*" to query a presentation. Lee begins where the invention ends.

Miller never operates on multimedia content, except for storing, retrieving, replacing or deleting. Miller never performs any operation on a three dimensional video sequence according to the invention.

Lee describes DAGs only. Lee only queries DAGs. Lee is silent on content entities according to the invention, segmentation, and measured attributes associated with corresponding edges. According to Lee "Each presentation stream is a node in the presentation graph and edges describe sequential or concurrent playout of streams." See page 363, right col., 3rd/4th paragraphs. The Examiner is respectfully requested to explain which words mean measured attributes, segmenting, or associating measured attributes with edges.

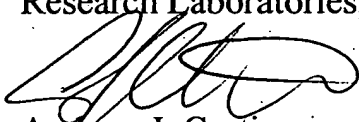
Miller never describes content entities produced by extracted and associated features as claimed, nor does Miller traverse anything. Therefore, Miller cannot teach at least one secondary content entity is associated with a particular content entity, and wherein the secondary content entity is selected during the traversing. Nor can he teach a summary of the multimedia is a selected permutation of the

content entities according to the associated ranks. Miller never ranks or summarizes.

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance and an early indication of the same is courteously solicited. The Examiner is respectfully requested to contact the undersigned by telephone at the below listed telephone number, in order to expedite resolution of any remaining issues and further to expedite passage of the application to issue, if any further comments, questions or suggestions arise in connection with the application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 50-0749 and please credit any excess fees to such deposit account.

Respectfully Submitted,
Mitsubishi Electric
Research Laboratories, Inc.



Andrew J. Curtin
Registration No. 48,485

201 Broadway, 8th Floor
Cambridge, MA 02139
Telephone: (617) 621-7573
Facsimile: (617) 621-7550